

## An Uninhabited Aerial System Safety Analysis Model (USAM), Phase I

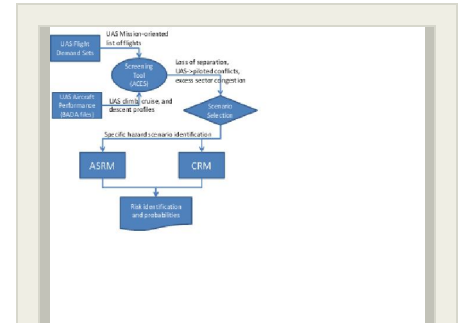
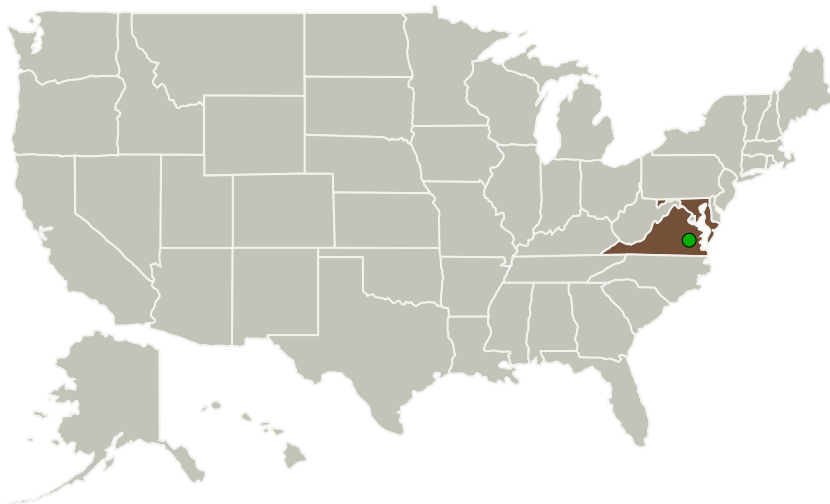


Completed Technology Project (2013 - 2013)

## Project Introduction

The National Airspace System (NAS) in the United States will become a complex array of commercial and general aviation aircraft, unmanned aircraft systems, reusable launch vehicles, rotorcraft, airports, air traffic control, weather services, and maintenance operations, among others. The Federal Aviation Administration (FAA) projects that by 2025 air traffic will increase by more than 50 percent with 1.1 billion passengers a year and more than 85,000 flights every 24 hours contributing to further delays and congestion in the sky. This increased system complexity necessitates the application of systematic safety risk analysis methods to understand and eliminate where possible, reduce, and/or mitigate risk factors. The product of this effort is the development of an Uninhabited Aerial System (UAS) safety analysis model, which hereafter is called USAM. The USAM effort proposed herein is an extension of current efforts underway by the UAS community, and it extends these efforts by incorporating UAS scenarios and encounter geometries to populate existing safety analysis models, thereby producing credible future UAS safety metrics.

## Primary U.S. Work Locations and Key Partners



An Uninhabited Aerial System Safety Analysis Model (USAM)

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Organizations Performing Work	Role	Type	Location
Intelligent Automation, Inc.	Lead Organization	Industry	Rockville, Maryland
● Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

## Primary U.S. Work Locations

Maryland	Virginia
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## Project Transitions

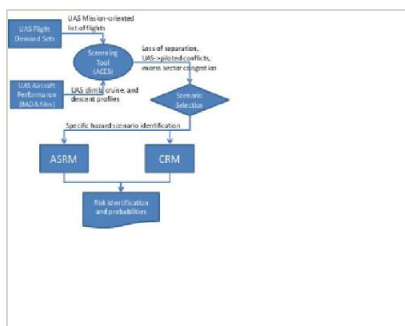
▶ **May 2013:** Project Start

✓ **November 2013:** Closed out

## Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/140361>)

## Images



## Project Image

An Uninhabited Aerial System Safety Analysis Model (USAM)  
(<https://techport.nasa.gov/image/126288>)

## Organizational Responsibility

## Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

## Lead Organization:

Intelligent Automation, Inc.

## Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

## Program Director:

Jason L Kessler

## Program Manager:

Carlos Torrez

## Principal Investigator:

Vivek Kumar

## Co-Investigator:

Vivek Kumar

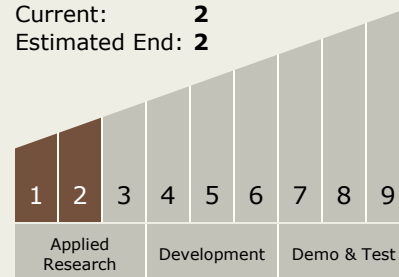
# An Uninhabited Aerial System Safety Analysis Model (USAM), Phase I

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## Technology Maturity (TRL)

Start: **1**  
Current: **2**  
Estimated End: **2**



## Technology Areas

### Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - └ TX16.1 Safe All Vehicle Access

## Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System